

IN THE DRAWINGS

The attached sheet of drawings includes changes to Fig. 1. This sheet, which includes Figs. 1 and 2A, replaces the original sheet including Figs. 1 and 2A.

Attachment: One Replacement Sheet (1)

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 13, 15-20, and 37-44 are currently pending in the present application, Claims 13 and 15-20 having been amended, and Claims 14 and 21-36 having been canceled without prejudice or disclaimer by the present amendment. Claims 37-44 are added. No new matter is added.¹

In the Official Action, the drawings were objected to; and Claims 13-36 were rejected under 35 U.S.C. §102(e) as unpatentable over Oh et al. (U.S. Patent No. 6,959,856, hereinafter “Oh”).

Regarding the objection to the drawings, Figure 1 has been labeled as “Prior Art,” as suggested on page 2 of the Official Action. Accordingly, the objection to the drawings is believed to be overcome.

Regarding the rejection of Claims 13-36 as unpatentable over Oh, Applicants respectfully traverse the rejection.

Claim 13 has been amended to incorporate the features of previous Claim 14. Amended Claim 13 recites a method to produce conductive rods on an electronic component comprising one or more conductive blocks, each of the conductive rods being in at least partial contact with a block of the electronic component, the method comprising:

deposition of a conductive base on the component;
deposition of a masking layer on the conductive base;
formation in the masking layer of a plurality of holes, at least one conductive block of the conductive blocks being located opposite one or more holes, at least one hole of the holes having none of the conductive blocks opposite it;
etching the conductive base via the holes;
filling of the holes with a conductive material base, by electrolysis and using the conductive base as an electrode, to form the conductive rods.

¹ Support for the amendment to Claim 13 is found in previous Claim 14. Newly added Claim 37 finds support in previous Claims 13 and 21. Newly added dependent Claims 38-43 find support in previous Claims 15-20, and Claim 44 finds support in previous Claim 28.

Thus, an advantage of etching the conductive base via the holes and then filling the holes with a conductive material base, by electrolysis and using the conductive base as an electrode, to form the conductive rods is that it prevents the fabrication of conductive rods that would not be located on conductive blocks, without having to consider the positioning of holes of the masking. See Applicants' specification on page 8, lines 24-27.

Regarding the claimed "etching the conductive base via the holes," the Official Action asserts on the bottom of page 3 that:

... the conductive base is going to be at least partially etch via the holes immediately after the holes (616) are formed as a consequence of the etching process to form the holes 616).

Oh is directed to a method for manufacturing a solder bump structure. Oh describes a photoresist 615 is patterned over the intermediate layer 607 so as to expose one or more surface portions of the intermediate layer 607. As seen in Fig. 6(b) of Oh, a plurality of openings 616 in the photoresist 615 have a cross-section which defines a mesh pattern in a plane parallel to the contact pad. However, Applicants submit Oh is silent regarding etching the conductive base through holes before filling these sides by electrolysis.

Further, regarding the above-noted undocumented assertion as to the nature of the conductive base being at least partially etch via the holes immediately after the holes are formed as a consequence of the etching process to form the holes with regard to Claim 13, Applicants respectfully point out that a set of making mask holes does not necessarily imply such an etching step. Indeed, M.P.E.P. § 2112 indicates that the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of the result or characteristic. In Re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993). In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior

art.” Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990). To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” In Re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (MPEP § 2112).

However, the Official Action provides no such extrinsic evidence to support a finding of inherency. Should the present rejection be maintained, Applicants respectfully request that the next Office Communication specifically provide evidence to support such a finding of inherency.

Therefore, since M.P.E.P. § 2131 requires for anticipation that each and every feature of the claimed invention must be disclosed in the reference, it is respectfully submitted that Oh does not anticipate or render obvious independent Claim 13. Therefore, independent Claim 13 (and Claims 15-20 dependent therefrom) is believed to patentably define over the applied reference.

To the extent Oh may be considered relevant to new Claim 37, the following remarks are provided.

Newly added Claim 37 recites a method to produce conductive rods on an electronic component including one or more conductive blocks, each of the conductive rods being in at least partial contact with a block of the electronic component, the method comprising:

- deposition of a conductive base on the component;
- deposition of a thin insulating layer on the conductive base;
- formation of a plurality of openings in the thin insulating later, each opening being located opposite a conductive block;
- deposition of a masking layer on the conductive base;
- formation in the masking layer of a plurality of holes, at least one conductive block of the conductive blocks being located opposite one or more

holes, at least one hole of the holes having none of the conductive blocks opposite it;

filling of the holes with a conductive material base, by electrolysis and using the conductive base as an electrode, to form the conductive rods; and removal of the masking layer.

Thus, an advantage of depositing of a thin insulating layer on the conductive base and forming of a plurality of openings in the thin insulating later, each opening being located opposite a conductive block before depositing the making layer is that it enables fabrication of conductive rods only on the conductive blocks, without having to use a dedicated photolithography step or an extra mask to produce a plurality of holes in the masking layer.

On the top of page 5, the Official Action cites passivation layer 603 with reference to Fig. 5(a) of Oh as corresponding to the claimed “thin insulating layer.” The Official Action further cites Fig. 6(a) and a surface of a chip pad 602 of Oh as depicting the claimed “each opening being located opposite a conductive block.”

With reference to both Fig. 5(a) and Fig. 6(a), Oh describes that an opening is defined in one or more passivation layers which exposes a surface of a chip pad. Oh further describes that at least one intermediate layer is formed over the passivation layers and over the exposed surface of the chip pad 502, and that intermediate layers may be under bump metallurgy (UBM) layers. As seen in Fig. 6(b), Oh further describes a photoresist is patterned over the intermediate layer so as to expose one or more surface portions of the intermediate layer, as noted above. Fig. 6(c) of Oh depicts a metal 611 is deposited so as to fill the openings to a given height.

However, Applicants submit Oh is silent regarding deposition of a thin insulating layer on the conductive base and formation of a plurality of openings in the thin insulating later, each opening being located opposite a conductive block, before the deposition of the making layer. Therefore, Oh does not disclose or suggest “a method to produce conductive rods on an electronic component including one or more conductive blocks, each of the

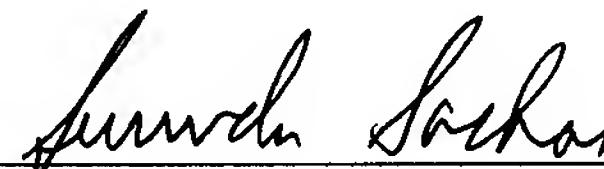
conductive rods being in at least partial contact with a block of the electronic component," as defined in independent Claim 37.

Since M.P.E.P. § 2131 requires for anticipation that each and every feature of the claimed invention must be disclosed in the reference, it is respectfully submitted that Oh does not anticipate or render obvious independent Claim 37. Therefore, independent Claim 37 (and Claims 38-44 dependent therefrom) is believed to be allowable.

Consequently, in view of the present amendment and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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